MEETING SUMMARY

washington river protection solutions

From: M.B. Skorska
Phone: 373-3978
Location: Ecology Office,
Date: June 2, 2011
Subject: WMA C RCRA Field Investigation (RFI) Report Development Status Meeting

To: Distribution/Attendees

Attendees:

Bob Lober, ORP
Mike Barnes, Ecology
Joe Caggiano, Ecology
Jeff Lyon, Ecology
Beth Rochette, Ecology
Ginger Wireman, Ecology
Rebecca Gerhart, EPA
Maria Skorska, WRPS
Marcel Bergeron, WRPS
Jim Field, WRPS
Les Fort, WRPS

PURPOSE: The purpose of this monthly status meeting was to hold discussions on the content of the WMA C RCRA Field Investigation (RFI) report and its development. The focus of this particular meeting (Agenda) was the following:

- Review meeting minutes for the 4/21 meeting
- Review Ecology's comments for Annotated Outlines for Sections 4 and 6
- Discuss Annotated Outline for Section 5
- RFI and PA in WMA C closure process
- Development and Partial Approval Process for the Phase 2 RFI
- Discuss input to communications information sheet
- Next meeting – proposed date July 14, 9am, at Ecology

Review of the 4/21/2011 meeting minutes:

The meeting summary for April 21, 2011, was reviewed and approved (with comments) by the team.

Ecology requested that Attachment 1 in the April 21, 2011 meeting be revised to include the following, and to include the revised attachment with today's meeting summary. It is included as Attachment 1.

- Stakeholder's briefing meeting could be moved to March 2012 to avoid potential timing constraints associated with the holidays.
- DOE review period will be defined and the due date for Ecology comments will be 45 days after DOE's review is complete.
- A diamond will be added to the December 21, 2014 defining the TPA milestone M-45-61 as Rev 3.
- It was agreed that the stakeholders meeting would focus on the process for RFI development and Rev 0 RFI would not be given to the stakeholders for their review.

Review Ecology's comments for Annotated Outlines for Sections 4 and 6:

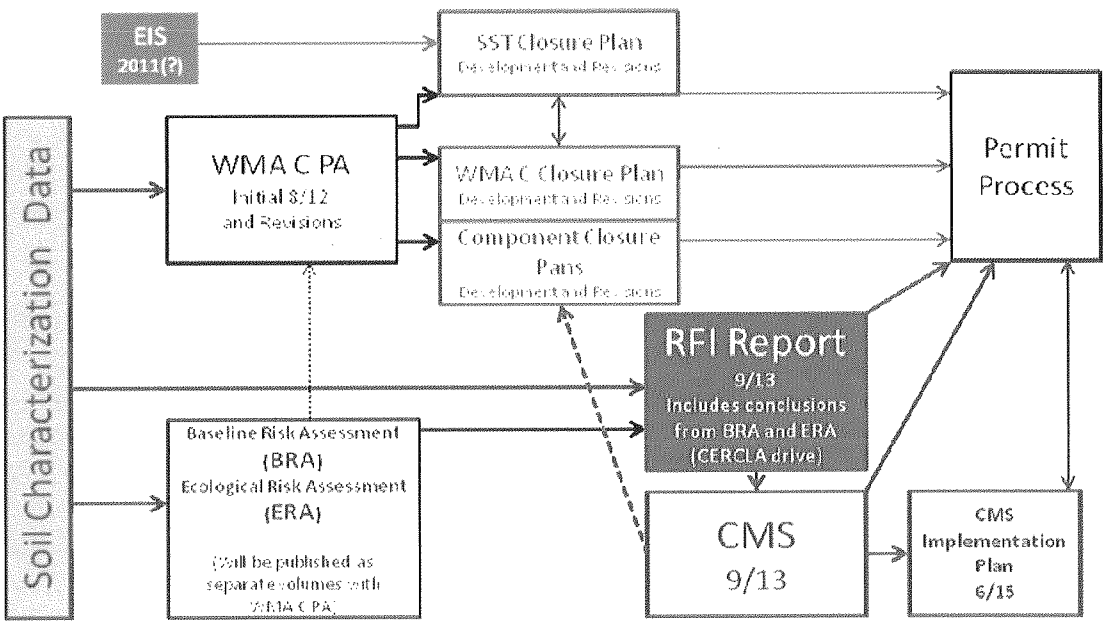
Ecology stated that the discussion of the subjects below resolved their comments for Sections 4 and 6. It was agreed that:

- the direct push surface information and the near surface sampling methods will be part of Section 6
- drywell monitoring as part of the surface monitoring will be included in the RFI.
- the RFI will discuss surface water
- facilities hydrologically up-gradient of WMA C will be addressed
- groundwater monitoring will be addressed.

RFI and PA in WMA C closure process

Action item #2 in the 4/21 meeting minutes was to communicate to management Ecology's concern that the PA schedule may impact the RFI. A presentation was prepared titled, "Functions of RCRA Facility Investigation (RFI) Report in WMA C Closure Process", see Attachment 2. That presentation included a discussion of the Hanford Federal Facility Agreement and Consent Order (89-10 Rev. 7) Appendix I process for closure and permit preparation for single shell tanks, and the following "RFI Report in WMA C Closure Process" figure.

RFI Report in WMA C Closure Process



The function of the RFI report is to reflect the current conditions at the WMA C, based on site characterization information, and including the existing risks to human health and the environment. To evaluate the current risks associated with the site, ORP intends to perform the Baseline Risk Assessment (BRA) and Ecological Risk Assessment (ERA) next fiscal year (funding permitting), in parallel with the preparation of the RFI.

The above figure illustrates how the RFI process is related to the BRA and ERA which will be published as separate volumes with the WMA C PA, and which will also be summarized in the RFI. The intent of the above figure is to show that the RFI effort is different from the "forward looking" Performance Assessment (PA) process:

It was also noted that the inclusion of conclusions from BRA and ERA in the RFI document is necessary for the RFI to be equivalent to a CERCLA Remedial Investigation (RI) which requires BRA and ERA.

Development Process for the Phase 2 RFI:
Provided in Attachment 3 is a description of a proposed RFI development and partial approval process. Rebecca Gerhart stated that EPA will not provide partial approvals and Ecology concurred;a standard TPA review process will be followed.

ACTION: Attachment will be revised to reflect this approach and reviewed in the next RFI meeting.

Annotated Outline for Section 5:
Marcel Bergeron led the discussion on the format of the RFI Section 5 handout provided as Attachment 4. Bob Lober talked about the waste sources and soil chemistry aspects and how such information will be discussed within the RFI. Marcel continued with the discussion on the characterization of the major past waste releases and how that information will be summarized and addressed within the section. It was noted that the structure of this section reflected the RFI guidance document and that the guidance document did not provide a checklist for this section. Annotated Outline for Section 5 is included as Attachment 4.

Input to communications information sheet:
Ecology's public communication liaison Ginger Wiremen talked about information needed to develop communication information sheets. She felt that the input provided during the meeting was helpful.

NEXT MEETING

Date:	July 14, 2011
Time:	9:00-11:00
Location:	Ecology Office

ACTIONS

Refer to the ACTIONS TABLE below. Actions will be removed from the list after ORP and Ecology have agreed to their completion.

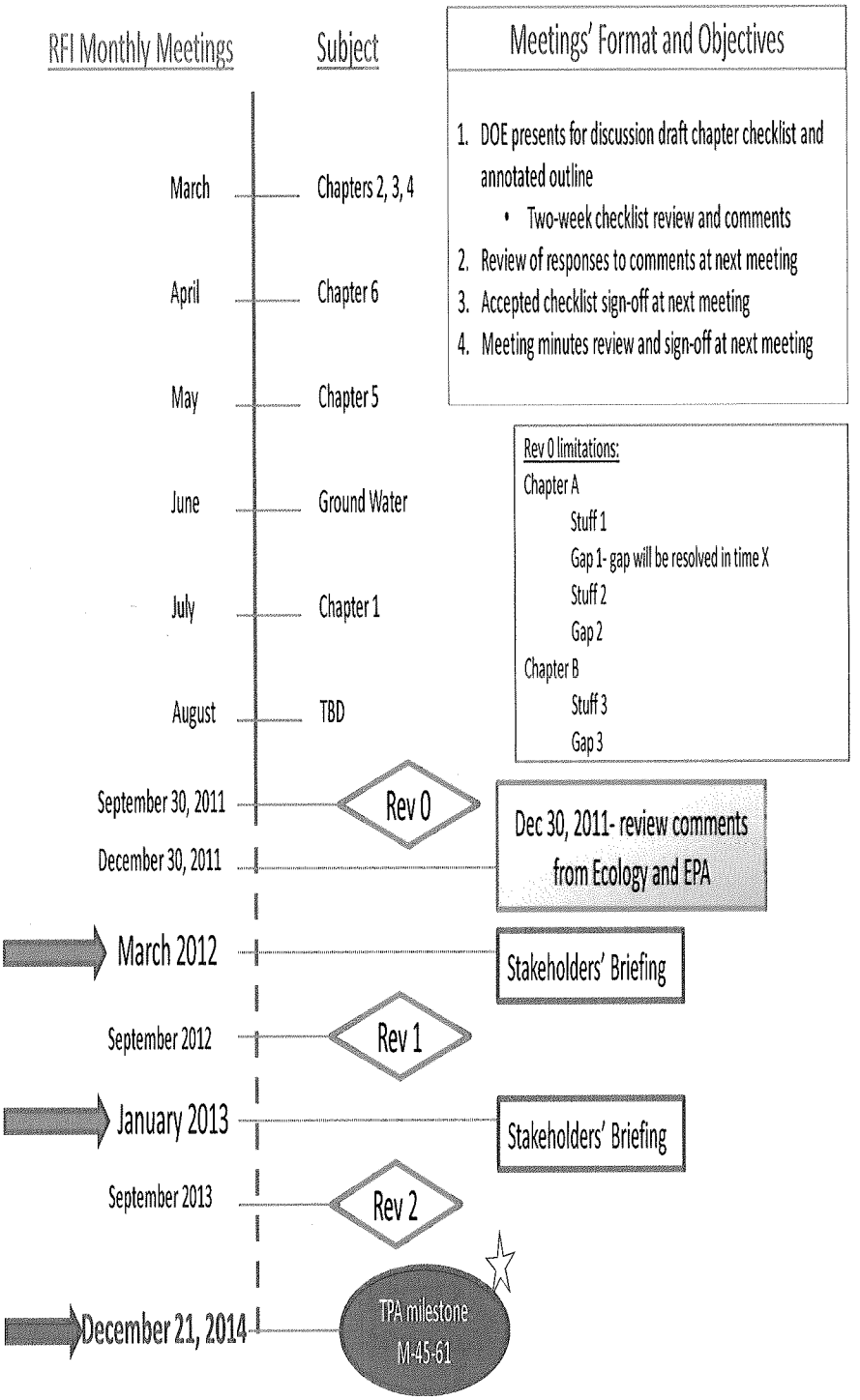
Robert Lober DOE Project Manager (print)	DOE Project Manager (signature)	8/3/2011 Date
Jeffery J. Lyon Ecology Project Manager (print)	Ecology Project Manager (signature)	8/3/2011 Date

ACTIONS

Action number	Action required	Actionee	Status
3/14/11-1	Define the process by which sections of the draft RFI would be reviewed, revised, and maintained under configuration management during development.	S. Eberlein, B. Lober, J. Lyon	In progress. Draft was submitted during 6/2/11 meeting but revisions were requested; see action # 6/2/11-2
4/21/11-1	Communicate to the management Ecology's concern that PA schedule may impact the RFI	M. Skorska	Closed. During 6/2/11 meeting it was agreed that PA does not impact the RFI.
4/21/11-2	Provide to Ginger Wireman material to develop communication for stakeholders	M. Skorska	Closed. Ginger Wireman stated during 6/2/11 meeting that she had the information needed.
6/2/11-1	Ecology expressed concerns about the apparent time and funding constraints, and requested from ORP a detailed schedule for development of the Baseline and Ecological Risk Assessment documents, including regulatory review periods and interactions with the RFI development (through to the milestone 12/2014)	M.Skorska/B.Lober	Assigned
6/2/11-2	August meeting to discuss review criteria, expectations and the pending review process and schedule/date (through to the milestone 12/2014)	M. Skorska	Assigned
6/2/11-2	Skorska/ Lyon: Revise the RFI development process to remove references to partial approval. J. Lyon is to provide input to the revised draft.	M. Skorska/J. Lyon	Assigned.

Action number	Action required	Actionee	Status

Attachment 1


RFI Monthly Meetings
Subject
March
Chapters 2, 3, 4
April
Chapter 6
May
Chapter 5
June
Ground Water
July
Chapter 1
August
TBD
September 30, 2011
Rev 0
December 30, 2011
March 2012
September 2012
Rev 1
January 2013
September 2013
Rev 2
December 21, 2014
TPA milestone
M-45-61
Meetings' Format and Objectives
1. DOE presents for discussion draft chapter checklist and annotated outline
• Two-week checklist review and comments
2. Review of responses to comments at next meeting
3. Accepted checklist sign-off at next meeting
4. Meeting minutes review and sign-off at next meeting
Rev 0 limitations:
Chapter A
Stuff 1
Gap 1- gap will be resolved in time X
Stuff 2
Gap 2
Chapter B
Stuff 3
Gap 3
Dec 30, 2011- review comments from Ecology and EPA
Stakeholders' Briefing
Stakeholders' Briefing

Attachment 2
Functions of RCRA Facility Investigation (RFI) Report
in WMA C Closure Process

RFI Report in the Closure Process of WMA C

- WMA C Phase 2 RCRA Facility Investigation (RFI) and Corrective Measures Study (CMS) are due in December 2014, per TPA milestone M-45-61.
- WMA C RFI will document results of RCRA facility investigations for soils at WMA C
  "An RFI report will be prepared by the DOE, and it will document the results of the RFI. The RFI report is a *primary document* as described in Section 9.0. " (TPA Action Plan, Section 7.4.2)
- WMA C RFI will facilitate identification of RCRA closure/postclosure requirements which will be incorporated in the RCRA Permit
  "Each RFI/CMS closure document will be structured such that RCRA closure requirements can be readily identified for a separate review/approval process and RCRA closure/postclosure requirements can be incorporated in the RCRA Permit." (TPA Action Plan, Section 5.5)

2

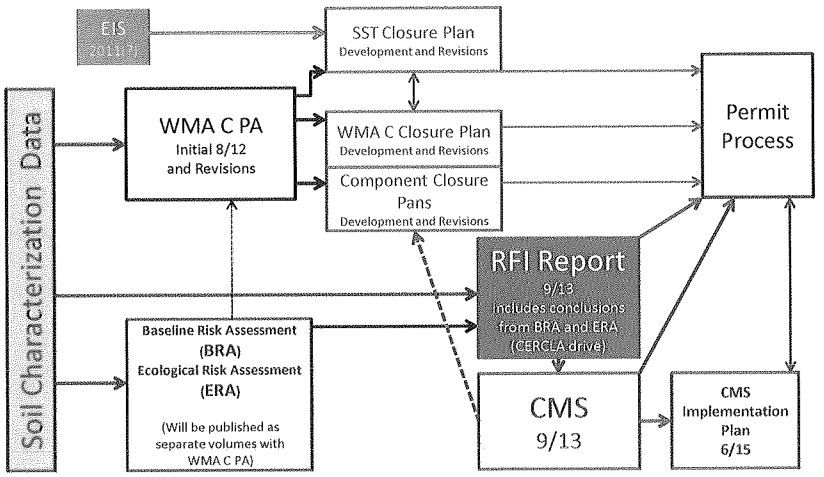
RFI Report in the Closure Process of WMA C

- Information in WMA C RFI must be functionally equivalent to information in a CERCLA Remedial Investigation (RI).
  - WMA C RFI will follow EPA Guidance for an RFI (http://www.epa.gov/osw/hazard/correctiveaction/resources/guidance/sitechar/)
  - WMA C RFI will address all CERCLA hazardous substances including radioactive substances
  - WMA C RFI will include conclusions from Baseline Risk Assessment (BRA) and Ecological Risk Assessment (ERA).
    - BRA and ERA will be published as separate volumes together with Performance Assessment (PA).

3

RFI Report in WMA C Closure Process

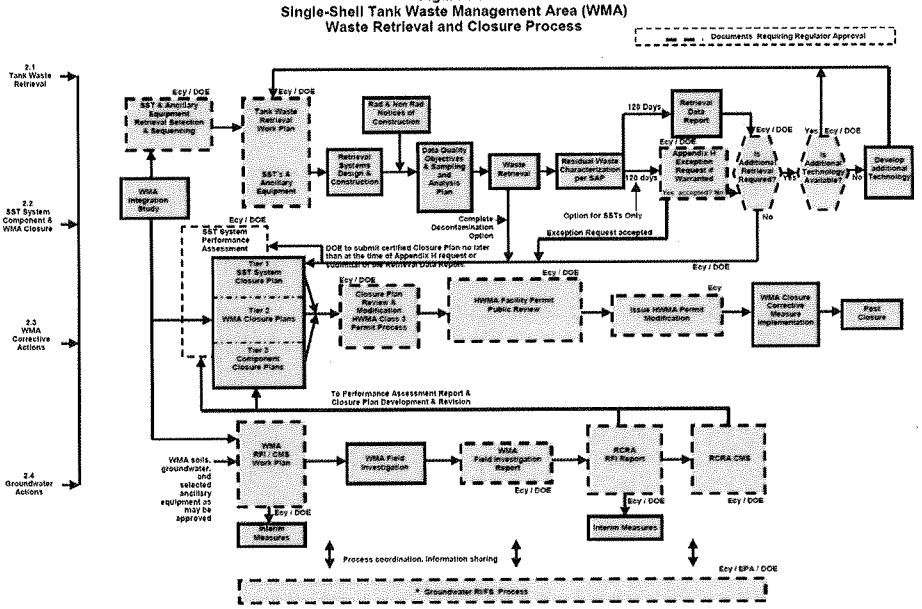
(also see TPA Appendix I Figure I-1)



4

APPENDIX I - SINGLE-SHELL TANK SYSTEM WASTE RETRIEVAL AND CLOSURE PROCESS

Figure I-1.
Single-Shell Tank Waste Management Area (WMA)
Waste Retrieval and Closure Process



Development and Partial Approval Process for the Phase 2 RCRA Field Investigation (RFI) for Waste Management Area (WMA) C

Goals:

1. Reach agreement (among ORP, Ecology and EPA) on the outline and checklist associated with each section of the RFI report in advance.
2. Provide sections of the RFI report as soon as the appropriate information is available, specifying what gaps will be filled in later.
3. Ecology will review sections and gaps in accordance with an agreed-to schedule

Note: The WMA C Phase 2 RFI and Corrective Measures Study (CMS) are due in December 2014, per TPA milestone M-45-61. In order to support closure of WMA C by 2019, the goal is to deliver both the RFI and the CMS in 2013. Early review and approval of some sections of the RFI, when complete, will facilitate review of the final document. Early review of actions that will be recommended in the draft permit will facilitate review of the final permit. The review process described here applies specifically to the RFI document.

Process for development of the RFI:

1. Hold regular meetings among ORP, Ecology, EPA and the TOC contractor to define the outline of each section of the RFI report, and develop a checklist for use in reviewing the report section.
2. Provide notes of the agreements reached in each meeting, along with the checklists that have been agreed upon. Obtain project manager concurrence on the notes and checklist and include this documentation in the administrative record.
3. ORP will provide partial drafts of the RFI on September 30, 2011 and September 30, 2012. ORP will transmit these drafts formally to Ecology/EPA with a cover letter indicating what sections are complete (and ready for review) and what sections are incomplete.
4. Ecology/EPA will review the drafts within 45 days and provide comments. Comments will be transmitted electronically.
5. Following receipt of comments, ORP, Ecology and EPA will work together in the regularly scheduled meetings to achieve comment resolution. ORP will generate an update to the partial draft. This update will be maintained under configuration management.
6. When the subsequent partial draft or complete RFI is submitted, any changes to the previously approved sections will be clearly defined. Any new sections will undergo the review process.

Note that this process does not affect the TPA milestone itself; upon completion of the RFI and CMS report, ORP will submit the primary document for Ecology and EPA review and comment, following the normal TPA process for a primary document. The submittal of the completed RFI and CMS will be no later that the due date of the milestone.

Attachment 4
Outline of FRI Section 5

1.0
2.0
3.0
4.0

5.0 DATA PRESENTATION

5.1 WASTE AND UNIT CHARACTERIZATION

This section of the report will provide information on the physical and chemical characteristics of major waste types and major releases.

5.1.1 INFORMATION ON PHYSICAL AND CHEMISTRY CHARACTERISTICS OF MAJOR WASTE TYPES

This section of the report would summarize the physical and chemical characteristics of the major waste streams that were transferred into and out of the WMA C SST system during past waste processing campaigns. The list of major waste streams that would be discussed in this section is provided in the table that follows. Detailed information on physical and chemical characteristics of major waste types would be provided in an Appendix.

Waste Streams in WMA C SSTs

Waste Type	Description	Tanks
AR	Water washed PUREX sludge (1967-1976)	C-103,1 06
BL	B Plant Low activity waste (1963-1972)	C-106
1C	First cycle $BiPO_4$ coating waste (1944-1956)	C-107, 108, 109, 110, 111, 112
CWP1	PUREX aluminum cladding waste (1956-1960)	C-101, 102, 103, 104, 105, 106, 111, 112
CWP2	PUREX aluminum cladding waste (1961-1972)	C-102, 104, 107, 112
CWZr1	PUREX/REDOX zirconium cladding waste (1968-1972)	C-102, 104
HS	Hot Semiworks waste (1961-1968)	C-111, 112, 201, 202, 203, 204
MW1	$BiPO_4$ Metal Waste (1944-1949)	C-102
OWW3	PUREX organic wash waste (1968-1972)	C-104
SRR	Strontium recovery waste (1969-1985)	C-107
TBP (UR)	Tributyl phosphate /Uranium Recovery Waste (1952-1957)	C-101, 102, 105, 106
TFeCN	Ferrocyanide sludge (1955-1958)	C-111, 112
TH1	Thoria process waste (1966)	C-102
TH2	Thoria process waste (1970)	C-104

Discussion of the physical and chemical characteristics of these waste streams will be presented using the following outline.

1. Wastes Streams Transferred Into and Out of 200-Series Tanks.
   a. Bismuth Phosphate Plant Wastes
   b. Tri-Butyl Phosphate Plant Wastes
   c. Plutonium Uranium Extraction, B Plant, Reduction-Oxidation, and Miscellaneous Wastes

2. Wastes Streams Transferred Into and Out of 200-Series Tanks.
   a. Metal Waste Retrieval Wastes
   b. Ferrocyanide Treatment of Tank Wastes
   c. Strontium/Rare Earth Fission Products Processing
   d. Plutonium Uranium Extraction Acidified Sludge Processing wastes

e. 241-A Tank Farm Process Condensate Treatment Testing

3. Wastes Transferred Into and Out of 241-C-801 Cask Loading Building

PHYSICAL, CHEMICAL, RADIOLOGICAL CHARACTERISTICS OF INVENTORIES ASSOCIATED WITH MAJOR PAST RELEASES

This section of the report would summarize the physical and chemical characteristics of the inventories associated with the major waste releases in WMA C. Detailed information on physical and chemical characteristics of the inventories of these major waste types would be provided in an Appendix.
Discussion that follows will be organized in the following outline:

4. Releases from 100-Series Tanks
5. Releases from 200 Series Tanks
6. Other Major Unplanned Releases
7. Releases of other Ancillary Facilities

5.2 ENVIRONMENTAL SETTING CHARACTERIZATION

This section of the report will provide the most current interpretation of geologic and hydrogeologic conditions based on data developed in the Phase 2 characterization (Borehole logs; dry well logging etc.) and from data and information found in recent published reports. The data and information will be provided in both tabular and graphical depictions of the local environmental setting using:

- Cross-sections showing the lateral and vertical extent of hydrogeologic units and other hydrogeologic features
- Plan view maps showing the lateral extent and thicknesses of major subunits
- Fence diagrams showing major units and position of water table
- Plan view maps showing top of basalt

5.3 CHARACTERIZATION OF MAJOR PAST RELEASE(S)

This section will provide interpretation of results of characterization efforts for past major wastes releases in WMA C to date. Data and information will be provided in tabular form and in a variety of graphical displays.

5.3.1 OVERVIEW OF PHASE 2 CHARACTERIZATION RESULTS

This subsection will provide an overview of characterization results to date for the uppermost surficial soils (above 5 m) and the deeper vadose zone (below 5 m) with an emphasis on a summary of analytical results (detects and non-detects) relative to various regulatory standards and the key contaminants of potential concern that emerge from the analytical data to date. Data and information will be provided in tabular form and in a variety of graphical displays.

1. Summary of Analytical Results

a. Uppermost Surficial Soils (Above 5 m)
b. Deeper Vadose Zone Soils (Below 5 m)

2. Key Constituents of Potential Concern

a. Uppermost Surficial Soils (Above 5 m)
b. Deeper Vadose Zone Soils (Below 5 m)

5.3.2 INVESTIGATIONS NEAR 100-SERIES SSTs

Data and information about the subjects addressed in the following paragraphs will be provided in tabular form and in a variety of graphical displays.

1. 241-C-101 SST

This subsection will describe the overall objective of characterization efforts and results at direct pushes near sites A and B in vicinity of 241-C-101 SST.

a. Objectives of Investigation
b. Results from Direct Push Site A (TBD)
c. Results from Direct Push Site B (TBD)

2. 241-C-103 and 241-C-106 SSTs

This subsection will describe the overall objective of characterization efforts and results at direct pushes near site L between 241-C-103 and 241-C-106 SSTs.

a. Objectives of Investigation
b. Results from Direct Push Site L

3. 241-C-104 SST

This subsection will describe the overall objective of characterization efforts and results of dry-well logging and at direct pushes near site J in vicinity of 241-C-101 SST.

a. Objectives of Investigation
b. Results of Dry-Well Logging
c. Results from Direct Push Site J (TBD)

4. 241-C-106 and 241-C-109 SSTs

This subsection will describe the overall objective of characterization efforts and results at direct pushes near site E between 241-C-106 and 241-C-109 SSTs.

a. Objectives of Investigation
b. Results from Direct Push Site E

5. 241-C-108 SST

This subsection will describe the overall objective of characterization efforts and results of dry-well logging and at direct pushes near site K in vicinity of 241-C-108 SST.

a. Objectives of Investigation
b. Results of Dry-Well Logging
c. Results from Direct Push Site K (TBD)

6. 241-C-109 SST

This subsection will describe the overall objective of characterization efforts and results of dry-well logging in vicinity of 241-C-109 SST.

a. Objectives of Investigation
b. Results of Dry-Well Logging

7. 241-C-110 SST

This subsection will describe the overall objective of characterization efforts and results of dry-well logging and at direct pushes near site U in vicinity of 241-C-110 SST.

a. Objectives of Investigation

b. Results of Dry-Well Logging
c. Results from Direct Push Site U

8. 241-C-111 SST

This subsection will describe the overall objective of characterization efforts and results of dry-well logging and at direct pushes near site V in vicinity of 241-C-111 SST.
a. Objectives of Investigation
b. Results of Dry-Well Logging
c. Results from Direct Push Site V (TBD)

9. 241-C-112 SST

This subsection will describe the overall objective of characterization efforts and results of dry-well logging in vicinity of 241-C-109 SST.
a. Objectives of Investigation
b. Results of Dry-Well Logging

5.3.3 INVESTIGATIONS NEAR 200-SERIES SSTs

Data and information about the subjects addressed in the following paragraphs will be provided in tabular form and in a variety of graphical displays.

1. 241-C-203 SST

This subsection will describe the overall objective of characterization efforts and results at direct pushes near site C in vicinity of 241-C-203 SST.
a. Objectives of Investigation
b. Results from Direct Push Site C (TBD)

2. 241-C-201, 241-C-202 and 241-C-204 SSTs

This subsection will describe the overall objective of characterization efforts and results at direct pushes near site C in vicinity of 241-C-201, 241-C-202, and 241-C-204 SSTs.
a. Objectives of Investigation
b. Results from Direct Push Site D (TBD)

5.3.4 INVESTIGATIONS NEAR UNPLANNED RELEASE SITES

Data and information about the subjects addressed in the following paragraphs will be provided in tabular form and in a variety of graphical displays.
This subsection will describe the overall objectives of characterization efforts and results from investigations at 200E-UPR-81, 200E-UPR-82, 200E-UPR-86, and other known UPR sites.

1. 200E-UPR-81

This subsection will describe the overall objective of characterization efforts and results of local SGE survey and direct pushes neat Site P in vicinity of 200E-UPR-81.
a. Objectives of Investigation
b. Results of Local SGE Survey
c. Results from Direct Push Site P

2. 200E-UPR-82

This subsection will describe the overall objective of characterization efforts and results of local SGE survey and direct pushes neat Site Q in vicinity of 200E-UPR-82.

a. Objectives of Investigation
b. Results of Local SGE Survey
c. Results from Direct Push Site Q (TBD)

3. 200E-UPR-86

This subsection will describe the overall objective of characterization efforts and results of local SGE survey in vicinity of 200E-UPR-86.
a. Objectives of Investigation
b. Results of Local SGE Survey

4. Other UPR Sites

a. 200E-UPR 72 and C-8 Drain

This subsection will describe the overall objective of characterization efforts and results of direct pushes near site S in vicinity of 200E-UPR-72 and the C-8 Drain.
1) Objectives of Investigation
2) Results from Direct Push Site S (TBD)

b. 200E-UPR-91

This subsection will describe the overall objective of characterization efforts and results of direct pushes near site H in vicinity of 200E-UPR-91
1) Objectives of Investigation
2) Results from Direct Push Site H

c. 200E-UPR-115
1) Objectives of Investigation
2) Results from Direct Push Site I

5.3.5 INVESTIGATIONS NEAR OTHER ANCILLARY FACILITIES

This subsection will describe the overall objectives of characterization efforts and results from investigations at nearby ancillary facilities (C-801 Chemical drain and the C-301 Catch Tank). Data and information about the subjects addressed in the following paragraphs will be provided in tabular form and in a variety of graphical displays.

1. C-801 Chemical Drain and 241-C-103 SST

This subsection will describe the overall objective of characterization efforts and results of direct pushes near site F in vicinity of the C-801 Chemical Drain and 241-C-103 SST.
a. Objectives of Investigation
b. Results from Direct Push Site F and G (TBD)

2. C-301 Catch Tank

This subsection will describe the overall objective of characterization efforts and results of direct pushes near site R in vicinity of the C-301 catch tank.
a. Objectives of Investigation
b. Results from Direct Push Site R (TBD)

5.3.6 EXTENT OF CONTAMINATION AT SCALE OF WMA C

This section will describe our understanding and interpretation of the extent of contamination in the vadose zone at the larger scale of WMA C. This understanding and interpretation will be based on the collated results of the local-scale investigations of contamination in surficial soils above 5 m and deeper vadose zone sediments below 5 m.
The understanding and interpretation of vadose zone contamination from the local- and tank farm scales will be used to provide a basis for our understanding and interpretation of past and future projected groundwater contamination in the immediate vicinity of the WMA C. Data and information about the subjects addressed in the following paragraphs will be provided in tabular form and in a variety of graphical displays.

1. Interpreted Extent of Contamination in Vadose Zone

This subsection will provided a summary of the interpreted extent of vadose zone contamination in the uppermost surficial sediments above 5 m and within the deeper vadose zone below 5 m.

a. Extent of Contamination in Surficial Sediments in Uppermost 5 m.
- **1)** Interpretations Based on Indicator Constituents
- **2)** Uncertainties in Characterization Information

b. Extent of Contamination in Vadose Zone below 5 m.
- **1)** Interpretations Based on Indicator Constituents
- **2)** Uncertainties in Characterization Information

2. Past and Potential Future Impacts to Groundwater

This subsection of the report will provide a discussion of the implications of the extent of contamination in the vadose zone on past and potential future impacts to groundwater beneath the WMA C, The discussion of potential future impacts will focus, to the extent possible, on past work aimed at estimating future impacts to groundwater from WMA C.